JOURNAL OF LONG-TERM CARE

Dunatchik, A, et al. 2019. Predicting Unmet Need for Social Care. *Journal of Long-Term Care*, (2019), pp. 194–205.

RESEARCH

Predicting Unmet Need for Social Care

Allison Dunatchik*, Rossella Icardi† and Margaret Blake‡

Context: Demographic and other pressures have placed strains on the social (long-term) care systems in many countries. An ageing population and cuts to local authority budgets have put pressure on the availability of local authority funded adult social care in England and have raised concerns about unmet social care needs among older people. To prevent care needs going unmet, it is crucial to understand their predictors. However, research on this topic is limited.
Objective(s): To understand the predictors of unmet needs for adult social care in England.
Method(s): Using data from the English Longitudinal Study of Ageing (2002–2012), we employed an activities-based approach to develop a definition of unmet social care needs, drawing on available data, previous literature and consultations with social care users and carers. We then used logistic regression to analyse the factors that predict developing an unmet care need over a 10-year period among a sample of those aged 50 and older.
Findings: The likelihood of developing unmet care needs does not differ by factors like gender, wealth, social contact, education or health behaviours. The only significant predictors for unmet needs are living alone, being relatively young (though still over 50), not having a longstanding illness, losing a spouse and developing more severe needs. These findings are robust to a variety of model specifications.
Limitations: Results of this analysis may be sensitive to the definition of unmet need employed.
Implications: These findings contribute to the current debate on the funding and organisation of adult social care in England and will inform policymakers interested in addressing the issue of unmet social care needs among older people.

Keywords: unmet adult social care needs; activities-based approach; old age and social care; social policy; logistic regression

1. Introduction

As people age they may develop impairments in their ability to carry out activities necessary for independent living. Older people may develop difficulties with activities such as washing, dressing, eating, moving about, shopping, cleaning and cooking for themselves. As these difficulties develop people may receive help in a variety of ways, including from family and friends, professional care and support at home funded by the state through a local authority or out of people's own pockets (self-funders), adaptations and telecare at home, or residential care. However, in some cases they may receive no help at all, or help with some but not all of their difficulties (HM Government, 2012; Thompson et al., 2014).

This research focuses on England where paid for adult social (long-term) care is funded partly through local authorities and is partly self-funded, with most care provided unpaid by friends and family (Pickard et al., 2012). In 2017, in England, 68% of care users aged 65 and over received only unpaid help (Brown and Morris, 2018). Social care services can be provided in people's own homes or residential homes. Home-based care offers help and support with everyday tasks, which allow people to live as independently as possible (Brown and Morris, 2018). In recent years, an ageing population and, in particular, the growth in the share of population aged 80 and above, the so-called 'oldest old' (Age UK, 2016; Ismail et al, 2014), and cuts to local authority budgets have put great pressure on the availability of local authority funded adult social care. The Local Government Association (LGA) and Association of Directors of Adult Social Services (ADASS) estimate a funding gap for local authority funded adult social care growing at £700 million per year (LGA, 2015). This represents fewer people receiving publicly funded social care or receiving less of it, thereby placing growing pressures on family and friends. This pressure was predicted to lead into a 'care gap' by 2017, which would widen thereafter, caused by demand for intense care (20 hours a week or more) from adult children outstripping supply (Pickard, 2015). This is caused by a rise in the population of older adults

* University of Pennsylvania, US
† University of Bath, GB
‡ Ipsos MORI, GB
Corresponding author: Rossella Icardi (r.icardi@bath.ac.uk)

with disabilities, without a correspondingly large increase in the care available from adult children (assuming that the propensity to provide care remains unchanged). Some of this gap may be met by an increase in care from spouses but as the proportion of older people with adult children declines in the future, care from spouses will be insufficient. Moreover, there are also pressures on services for those 'self-funding' their care. Policy makers are grappling with the challenge of meeting the growing needs in a context where existing needs are not fully met and there are pressures on budgets (Bottery et al., 2018).

In light of these pressures, the Care Act 2014 has strengthened the focus on the prevention of care needs. Local authorities now have a responsibility to prevent the development of needs. The Care Act Guidance (2018) has identified three aspects of prevention addressing different stages in the development of care needs. Primary prevention is intended to stop care and support needs from developing among those who do not have them. Secondary prevention provides adaptation and support for people at greater risk of developing needs, and tertiary prevention helps people with established needs to improve independence, thereby preventing or reducing the need for social care or health services. While primary prevention deals with preventing the development of needs themselves, secondary and tertiary prevention are concerned with meeting needs so they do not develop further. By not meeting lower level or 'moderate' needs, this potentially accelerates rather than arrests people's need for significant care at a later date, as opportunities for secondary or tertiary prevention are missed. The Care Act focuses on ten key outcomes in determining whether people are eligible for support (Statutory instrument, 2015). These include basic physical outcomes such as nutrition, personal hygiene, toilet needs, and safety. They also include social outcomes such as developing and maintaining relationships, access to work, training and volunteering, use of local services, and the ability to meet caring responsibilities. The Act did not come into force until 2015, after the data for analysis in this research were collected.

To prevent care needs going unmet it is crucial to understand what is associated with their development. However, little is known about this and research on the topic is still limited. Existing studies focus on health needs (Herr et al., 2014) or on groups of older people with specific conditions, such as mental illnesses or dementia (e.g. Futeran and Draper, 2012; Gaugler et al., 2005), but empirical evidence on what is associated with the development of unmet adult social care needs is lacking. Using data from the English Longitudinal Study of Ageing (ELSA: 2002–2012) (see below for a fuller description of this survey), we aim to fill this gap by exploring the predictors of unmet needs for adult social care in England. We extend the literature on social care needs in two ways. First, by developing a definition of unmet adult social care needs, drawing on the data available, previous literature and consultations with stakeholders, including older people. Second, by using logistic regression to analyse the factors and circumstances that predict developing an unmet need for adult social care among those with a care need over a 10-year period.

This paper is organised as follows. Section 2 presents the definitions of unmet needs available in the literature and the development of the definition used within the paper. Section 3 introduces the data and the empirical strategy while Section 4 describes the results. Section 5 concludes.

2. Defining unmet adult social care needs

Adult social care needs may be met in diverse ways through unpaid help, and/or self-funded and local authority funded formal care or adaptations. This means that the definition of unmet needs itself and its causes are complex. Previous research has conceptualised unmet needs in a variety of ways. A common approach involves identifying whether someone has care needs by asking about their ability to perform activities of daily living (ADLs) or instrumental activities of daily living (IADLs) (see below for a discussion of what ADLs and IADLs are) independently and whether they receive any help with those particular needs. If they report difficulties with these activities and do not receive help with them, this is defined as an unmet need. In the Health Survey for England (HSE) report (Maplethorpe et al., 2015), respondents were considered to have unmet needs if they had difficulties with at least one ADL (or IADL) for which they had not received help in the last month. Results indicate that 21% of men and 29% of women over 65 years had an unmet need with at least one ADL and 13% of men and 18% of women had an unmet need with at least one IADL in 2014. Research by Age UK (2014), based on data from ELSA wave 6 (2012–2013), has shown that 31% of people aged 65 or over who have difficulty in carrying out essential activities of daily life do not receive any formal help from care workers or unpaid help from family, friends or neighbours. A more recent update in 2017 using ELSA wave 7 data and updated NHS Digital data on provision, showed that there have been further increases in this figure (Age UK, 2017). ADL and IADL based approaches have also been used by Vlachantoni et al. (2011) to explore unmet needs using ELSA, General Household Survey (GHS) and British Household Panel Survey (BHPS) data and in a study in the USA in the 1990s (Allen and Mor, 1997). A broadly similar approach was taken by Lloyd and Ross (2014) but with a narrower definition (including only those with difficulties with three or more ADLs – substantial care needs). They extrapolated from wave 6 ELSA data that 6.7% of the older population living at home have difficulty undertaking three or more ADLs (560,000 in the population) of whom 70,000 (12.5%) receive no care. Modelling of future care needs to explore potential future unmet needs has also taken an ADL and IADL based approach using ELSA (Pickard et al., 2012; Pickard, 2015).

An ADL and IADL based approach has advantages and disadvantages. Although the data from ELSA on ADLs and IADLs provides data from people who are not care users and may not identify themselves as needing care, the data does not provide an evaluation by the care user of whether their needs are met because it assumes that once help is received the need is met. Alternative approaches involve

asking people with care needs whether they feel their needs are met. Research by Brimblecombe et al. (2016) with carers and care recipients identifies unmet need among those who receive unpaid care. In that study, carers of working age identified themselves as providing unpaid care and then facilitated the researchers in contacting the person they cared for. The care recipients ranged from children to older people; 60% of the care recipients in the survey were aged 65 and over and 32% were adults aged 16–64 years. Nearly half (47%) of care recipients felt they needed more services to meet their needs. This highlights the issue that receiving help does not necessarily mean that all needs are met. Furthermore, two-thirds of unpaid carers (66%) felt the care recipient needed more services. Thus, even where needs are being met, as reported by the care recipient, there may be unmet needs related to the burden being placed on the carer, or the care recipient may not fully acknowledge all their needs. While this approach has the advantage of including the views of both the care recipient and carer, it excludes those who do not receive any care (and in that particular research the sample was limited to people who received some unpaid care). A systematic review by de Sao Jose et al. (2016) highlights the ambivalence felt by those older people who prefer unpaid care over formal care but have feelings of guilt associated with the burden placed on unpaid carers. This ambivalence may contribute to the disparity between the views of carers and recipients in relation to unmet needs.

The ADL and IADL based approach also has the limitation that it is very task-focused and may underplay the importance of other aspects of life such as social contact and maintaining a sense of purpose, which are outcomes under the Care Act 2014 but were considered less important in determining eligibility for care at the time the data was collected. Data from ELSA are available on some of the latter, but there is agreement in the literature that these should form covariates in the analysis rather than forming part of the definition of unmet need, in order to keep the analysis focused on the types of needs local authorities were responsible for meeting at the time the data were collected (see Lambert et al., 2017). The importance of social contact and a sense of purpose and their relation to care needs was explored in qualitative interviews as part of the wider project and this is reported on elsewhere (Lambert et al., 2017).

2.1 Definition of unmet need

As shown, there is currently no universal agreement on which definition to use when describing unmet social care needs for adults. Therefore, the challenge we faced was to develop a definition to be used for the analysis undertaken in this paper. In line with prior research on social care needs (e.g. Vlachantoni et al., 2011; Lloyd and Ross, 2014), we used an activities-based approach to conceptualise unmet adult social care needs, developing a definition based on the ADL, IADL and mobility care needs of ELSA respondents and the help or aids received for those needs. The reason for this choice is that it allows the inclusion of people who do not have their needs met but may not identify as having unmet needs. Furthermore, by using a standard list of activities and asking about difficulty we could include people who might not even consider they have a need for care. In addition to drawing on prior research and data available, our definition of unmet need was developed after consultation with providers of adult social care and other key stakeholders including older people. This has influenced the development of the definition of unmet need used in this paper.[1] We met with stakeholders including the Department of Health,[2] charities supporting older people and those with specific disabilities, home care providers (an umbrella organisation and specific providers) and researchers working on related projects to discuss the definition of unmet need and the analysis. Three meetings were held: a project direction meeting at the start, a mid-project conversation to discuss emerging findings and agree definitions, and an end of project meeting to discuss findings and implications. We also discussed the definition and interim findings with older people belonging to Age UK's 'sounding board'. At the end of the project a launch event was held at which there was a panel discussion between charity, care provider and local government representatives to discuss the implications.

A second arm of this research project, consisting of 24 in-depth qualitative interviews with older people, sought to address some of the limitations of the quantitative analysis. These interviews explored older people's perspectives on their care needs, how needs developed over time and how their needs are met (Lambert et al., 2017). A key finding was that people considered need for social contact and purpose to be as important as meeting needs with ADLs and IADLs. This offered a useful perspective since the ELSA data did not allow analysis of this aspect of unmet need within the activities-based approach.

In an activities-based approach, activities are classified into three categories: Activities of daily living (ADLs), instrumental activities of daily living (IADLs) and mobility activities. ADLs refer to basic functional abilities while IADLs refer to a higher level of functioning, which require mental and physical capability and may deteriorate earlier than ADLs. Mobility activities refer to physical functioning abilities required to get around in daily life. Prior literature on unmet adult social care needs has used a wide range of qualifying thresholds for unmet need ranging from one ADL, IADL or mobility difficulty (Vlanchantoni et al., 2011) to three ADL difficulties (Lloyd and Ross, 2014).

In this paper, we find a middle ground, using a qualifying threshold for unmet needs such that an individual must have at least one difficulty with an ADL or two difficulties with IADLs or mobility activities (excluding difficulties climbing stairs). This choice was taken by drawing on some descriptive preliminary results, which will be discussed later in the paper.[3] In addition, it was drawn from the consultation with experts who suggested the importance of exploring the impact of not meeting lower levels of need, while at the same time restricting the definition to a level of need which would be recognised as being relevant by funders and care providers. With regard to how needs are met, most of the literature on unmet social care

needs considers an unmet need for adult social care to be a need for which a person does not receive help or care. This does not, however, consider the possibility that in some cases an aid or home adaptation may be sufficient to address a persons' difficulties. Taking into consideration these factors, we developed a definition such that an individual has unmet need if:

- He/she has difficulties with at least one ADL or two or more IADL or mobility activities (excluding difficulties with stairs[4]); AND
- He/she does not receive care (paid or unpaid) or have an adaptation for at least one of their ADL difficulties or at least two of their non-ADL difficulties.

Importantly, this definition is limited by the specific care needs inquired about in ELSA. It is also limited by the fact that it does not take into account the extent to which older people feel each of their care needs have been met as this information was not collected. Where an individual reports a care need and reports receiving help for that care need, our definition considers that need to be met. These limitations were explored in the subsequent in-depth interviews with older people, which formed the second part of the project (Lambert et al., 2017).

3. Data and Method

To undertake the analysis of unmet adult social care needs, we use data from the English Longitudinal Study of Ageing (ELSA). It is a prospective observational study of community-dwelling people aged 50 years and over in England. At baseline, in 2002–2003, the sample comprised 11,391 core participants who were recruited from households that had earlier participated in the Health Survey for England (HSE) in 1998, 1999 and 2001. HSE is an annual health examination survey, which each year recruits a different nationally representative sample using a multistage stratified random probability design. After the baseline, follow-up interviews take place every 2 years and health examinations every four years (the first health examination was in 2004–2005). A detailed description of ELSA can be found at: http://www.elsa-project.ac.uk/.

The ELSA dataset is ideal for this analysis because it provides information about a wide range of sociodemographic characteristics of participants and, most importantly, it provides information necessary to create the definition of unmet needs: namely, data on social care needs and whether or how they are met. As discussed above, ELSA does not provide data indicating the extent to which respondents feel their care needs are met by the help they receive. Therefore, where help for a care need is received, we assume the need is met, potentially underestimating the prevalence of unmet or undermet care needs. **Table 1** shows the ADL, IADL and mobility needs covered in the ELSA questionnaire and the proportion of those aged 60 or older who reported having difficulty with each activity in ELSA wave 6. The most common difficulties include climbing several flights of stairs, climbing one flight of stairs,[5] walking 100 yards and doing work around the house or garden.

The sample for this analysis covers data from waves 1 through 6 (2002–2012), and includes respondents without ADL difficulties at wave 1 (2002) and with difficulties (1 ADL and/or 2 or more IADLs or mobility difficulties) at wave 6 (2012), who were aged 60 or over at wave 6. This approach was taken in order to focus only on those individuals who had developed care needs over the ten-year time frame, some of whom had their needs met and some of whom did not. Those with only IADL or mobility difficulties at wave 1 were included, since to exclude people

Table 1: Social care needs covered in ELSA wave 6.

	Activity	Reporting difficulty	
		%	N
Mobility	Climbing several flights stairs without resting	38	2,514
	Climbing one flight stairs without resting	18	1,155
	Walking 100 yards	16	1,025
ADL	Dressing, including putting on shoes and socks	14	915
	Bathing or showering	10	666
	Getting in and out of bed	6	413
	Walking across a room	4	257
	Using the toilet, including getting up or down	4	252
	Eating, such as cutting up food	3	173
IADL	Doing work around the house or garden	17	1,112
	Shopping for groceries	11	651
	Managing money, such as paying bills and keeping track of expenses	4	218
	Taking medications	2	149

Base: Adults aged 60 and over, ELSA wave 6.

with mobility or IADL difficulties restricted the sample too much and would have prevented us looking at some people who had first developed ADLs during the observation period. ELSA collects data from people aged 50 and over, so all those who had been observed since ELSA wave 1 were at least 60 years old by wave 6. The intention of the model was to predict unmet need among those with care needs, not to predict the development of care needs. From the original pooled sample of 12,986 observations from 2002 and 2012 (wave 1 and wave 6), this selection rule led to an analytic sample of 2,164 observations (1,082 individuals) in wave 1 and 6. Missing information on some control variables included in the models reduced the sample further as indicated below each table. **Table 5** includes the description of the sample.

3.1 Multivariate analysis

Logistic regression was used to explore the predictors of developing unmet adult social care needs over a 10-year period. The time frame was chosen to explore whether characteristics and behaviours over a long time period can predict unmet needs. Understanding this would allow policy makers to model future unmet needs over a long enough period to prepare for it, as well as to target prevention activities before older people even develop care needs. Logistic regression is used when the outcome variable is binary (e.g. whether someone has unmet social care needs or not). The outcome variable of interest was a binary variable indicating an unmet need at wave 6, using the definition described above. The analysis controlled for potential predictors and other factors suggested by previous research that might affect social care needs being unmet, including respondents' socio-demographic characteristics, health status, social indicators and events which happened between wave 1 and wave 6. All explanatory variables were measured at wave 1 (apart from one measure of having an ADL at wave 6 and a measure of widowhood occurring between wave 1 and wave 6).[6] Socio-demographic characteristics are associated with the likelihood of developing unmet care needs (Herr et al., 2014); hence, the models control for age, gender, household composition, having children,[7] how often respondents meet their children and how often respondents speak with their children over the phone. In addition, we included variables indicating respondents' health status such as the presence of long-standing illness, measures of well-being, cognitive function, and of poor eyesight, and smoking behaviours. A measure of well-being was derived using the CASP-15 score scale (Vanhoutte and Nazroo, 2014). This is a revised 15-item scale of the CASP-19 scale to measure quality of life in later age covering four domains of individual needs: control, autonomy, self-realisation and pleasure (Wiggins et al., 2007). In the revised version four items are removed that either have low factor loadings to the substantive domain (i.e. shortage of money and family responsibility), or have moderate loadings across multiple substantive domains (i.e. my age prevents me from doing things, and my health stops me from doing things). The resultant 15-item CASP scale reflects a three-factor solution where the control and autonomy domains form one factor and each domain includes five items. The summed scores for the revised 15-item scale range from 0 to 45 where a higher score indicates better quality of life. Cognitive function was assessed using tests of immediate and delayed recall of ten common nouns. Cognitive function is typically assessed using both immediate recall and delayed recall tasks, because they represent distinct cognitive processes (Slamecka and McElree, 1983). While immediate recall involves use of working memory, delayed recall requires intact immediate recall as it assesses retrieval of the information learned during the initial processing involved in immediate recall (Elger et al., 1997).

ELSA data also included measures of physical activity. Respondents were asked how often they took part in vigorous, moderate and low intensity activities. These variables were used to create a three-category variable indicating the highest level of respondents' physical activity (no activity, light activity, moderate or vigorous activity). A variable indicating the presence of ADL difficulties in wave 6 was also added to account for the severity of the care needs. The availability of resources might also affect the likelihood to have needs which are unmet; hence, variables indicating respondents' socio-economic circumstances such as work, wealth, education and housing tenure were added. Wealth was a categorical variable indicating non-pension, non-housing wealth. Social indicators included whether family understands how respondents feel and whether respondents have friends. Existing research on the topic suggests that living in a couple is protective against the risk of having unmet health care needs (Herr et al., 2014). Therefore, we introduced a control variable indicating whether respondents experienced spousal loss in the time span used for the analysis (wave 1 to wave 6).

To build the model, a list of possible predictors of unmet needs was tested one-by-one and the association between each of them with unmet needs was checked. Firstly, the unadjusted association between each variable measured at wave 1 and unmet needs in wave 6 was tested. The variables which revealed a significant association with unmet needs were selected and introduced stepwise in blocks in the regression model. This procedure was repeated for each block of variables to obtain a final model which included only variables which showed a significant association with unmet needs at wave 6. Variables relating to demographic characteristics (age, gender and household composition) were kept throughout (even when they were not significantly associated with unmet needs) because they were revealed as significant predictors of unmet needs in previous research (Herr et al., 2014). Variables measuring the presence of long-standing illness, the highest level of educational qualification and housing tenure were used to control for longitudinal non-response across waves 1 and 6 and were also kept throughout to compensate for attrition patterns of non-response within ELSA data (Banks et al., 2016). The blocks of variables which were tested in the model were as follows:

Block 1: variables of socio-demographic characteristics measured at wave 1.

Block 2: variables of socio-economic characteristics measured at wave 1.

Block 3: variables of health-related characteristics measured at wave 1.

Block 4: variables of behaviours measured at wave 1.

Block 5: variables of social-inclusion characteristics measured at wave 1.

Block 6: variables indicating spousal loss between wave 1 and wave 6.

The final model contained only the variables that remained significant across all the previous steps (or which were needed for control purposes). The results for all variables in Blocks 1–6 (including those that were not included in the final model) are presented in Annex 1.

3.2. Weighting strategy

All analysis presented in this paper was weighted to help minimise bias from differential non-response amongst key sub groups, which in longitudinal surveys increases with each successive wave. Because of the sample design of the ELSA data, a correct weighting strategy is especially important to adjust for non-response at the initial sampling stage (when ELSA participants were selected to take part in HSE) and subsequent refusal to join the ELSA study and non-response at ELSA waves, including attrition through death. The regression analysis used data from waves 1 and 6 but not from the intermediate waves. Therefore, using the longitudinal wave 6 weights would exclude any respondents who did not take part in one or more of the intervening waves. The weighting approach thus involved using the cross-sectional weight from wave 6 with the inclusion of any variables associated with longitudinal non-response in the regression model to control for non-response (for details, see Banks et al., 2016).

It is also worth noting that ELSA may be problematic in its strategy regarding sample attrition: by design the study endeavours to bring back into the panel respondents who have previously attrited. The effect of attrition on measured disease prevalence and incidence may in turn impact on the measures of unmet needs. However, existing studies on this topic have revealed that for the 55–64 year old age group, baseline disease prevalence among attriters is almost identical to prevalence in the full sample (Banks, Muriel and Smith, 2011). This indicates that the effect on our estimates should not be of major concern. The same study shows instead that the least-educated individuals are more likely to drop out of the survey than their more educated peers.

4. Results

As described above, the definition of unmet need used in this paper deploys a qualifying threshold for unmet need such that an individual must have at least one difficulty with an ADL or two difficulties with IADLs or mobility activities (excluding difficulties climbing stairs). With regard to how needs are met, we also consider the possibility that in some cases an aid or home adaptation may be sufficient to address a persons' difficulties with certain activities. This was also driven by the observation that, as shown in **Tables 2** and **3**, 18% of those aged 60 and older in ELSA wave 6 have at least one home adaptation and 23% have at least one aid. According to this definition, **Table 4** shows that over half (58%) of those with qualifying care needs age 60 and older had unmet needs.

Table 6 presents the results from the final logistic regression model. The table shows only those variables included in the final model. The results are presented as odds ratios (ORs), which represent the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. For each characteristic in the model there is a reference group (for example, people aged 49–54) which always has an odds ratio (OR) of one. If another group (such as people aged 55–59 years) has an OR higher than one, this means that people in this group are more likely to experience the outcome than those in the reference group. OR can be interpreted in terms of percent change, by subtracting them from 1 and then multiplying the outcome for 100 ((OR-1)*100). It is important to note that

Table 2: Prevalence of home adaptations in ELSA wave 6.

Home adaptations	%
Bath or shower seat	11
Alarm that can call for help	6
Toilet equipment or commode	6
Stair lift	4
Bed lever or bed rail	3
Hoist	1
Changes to kitchen	1
None	82
Unweighted bases	*6,818*

Base: Adults aged 60 and over, ELSA wave 6.

Table 3: Prevalence in aids in ELSA wave 6.

Aids used	%
Cane or walking stick	20
Zimmer frame or walker	4
Manual wheelchair	3
Buggy or scooter	3
Electric wheelchair	1
Elbow crutches	1
None	77
Unweighted bases	*6,828*

Base: Adults aged 60 and over, ELSA wave 6.

Table 4: Prevalence of unmet need among those with qualifying social care needs in ELSA wave 6.

	%	N
Unmet need	58	*918*
Needs met	42	*620*
Unweighted base	*100*	*1538*

Base: Adults aged 60 and over with 1+ ADL difficulty or 2+IADL or mobility difficulties, ELSA wave 6.

Table 5: Descriptive statistics of analytical sample.

Factor	Category	% or average
Age w1		
	49–54	0.14
	55–59	0.19
	60–64	0.15
	65–69	0.16
	70–74	0.21
	75+	0.15
Gender w1		
	Female	0.59
	Male	0.41
Household composition w1		
	Lives with others	0.76
	Lives alone	0.24
ADL needs at wave 6		
	No (Ref.)	0.17
	Yes	0.83
Long-standing illness w1		
	No	0.40
	Yes**	0.60
Became widow between w1 and w6		
	No	0.87
	Yes	0.13
Education w1		
	No education	0.59
	Medium Education	0.31
	High Education	0.10
Housing tenure w1		
	Own the house	0.59
	Buying the house	0.21
	Rent	0.18
	Rent free	0.02
N		749

the model sought to explore the factors predicting unmet needs among those with care needs, it did not explore the factors which predict the development of care needs themselves.

Our results showed that older respondents were less likely to develop unmet social care needs than those in the youngest age groups (aged 49–54 at wave 1). In particular, respondents aged 75 and older have 76% ((OR-1)*100 = (0.24–1)*100 = –76%) lower odds of developing unmet needs over a 10-year period compared to those aged 49–54. Those who lived alone at wave 1 had 74% greater odds of developing unmet needs compared to those who lived with others (reference category: living with others). The absence of a longstanding illness at wave 1 was a significant predictor of developing unmet need at wave 6; those with a longstanding illness at wave 1 had 30% lower odds of developing unmet needs compared to those who did not have one.[8] Those who had ADL difficulties at wave 6 had a higher likelihood of developing unmet needs (than those with non-ADL difficulties i.e. mobility or IADL only); those with ADL needs had 1338% greater odds of developing unmet needs compared to those who did not have one. Those who experienced widowhood between wave 1 and wave 6 had higher likelihood of developing unmet needs; they had 70% greater odds of developing unmet needs compared to those who did not experience it.[9]

As a robustness check, this analysis was repeated using predictor variables from wave 5 and wave 6 to test whether the selection of a 10-year period was too long to detect significant predictors of unmet needs. The results from these tests are largely similar to those presented here. The only difference concerns educational qualifications. Those with a medium level of qualification had greater odds of developing unmet needs compared to those with no education in the models where predictors are measured at wave 5 and wave 6. Results are available upon request.

5. Discussion

Our analysis looked at the characteristics and circumstances which predict the development of unmet needs over a 10-year time span drawing on data from ELSA wave 1 (2002) and wave 6 (2012). Our model included only those with adult social care needs at wave 6 and the results show what predicts having unmet needs compared to having needs met (and not the development of needs).

The results of our investigation showed that being relatively younger and not having a long-standing illness were significant predictors of the development of unmet social care needs, after controlling for other social, health and economic factors. This may be because individuals who are younger and/or healthier (i.e. who do not have a long-standing illness) at wave 1 may be more likely to have their needs unmet at wave 6 because their needs may have developed more recently. Hence, they may be less aware of services available to meet their needs or might not have been able to organise care because less time has passed since the need developed compared with those who had long-standing illness in wave 1. It could also be an indication of care needs that have developed suddenly

Table 6: Results from logistic regression: predictors of unmet social care needs.

Factor	Category	OR	SE	Lower CI	Upper CI	P-value
Age w1						
	49–54 (Ref.)	1				
	55–59	0.84	(0.3)	0.44	1.61	0.6
	60–64	0.7	(0.2)	0.35	1.41	0.32
	65–69	0.7	(0.2)	0.36	1.36	0.3
	70–74**	0.35	(0.1)	0.19	0.66	0.0
	75+**	0.24	(0.1)	0.12	0.47	0.0
Gender w1						
	Female (Ref.)	1				
	Male	1.35	(0.3)	0.93	1.95	0.12
Household composition w1						
	Lives with others (Ref.)	1				
	Lives alone**	1.74	(0.4)	1.08	2.8	0.02
ADL needs at wave 6						
	No (Ref.)	1				
	Yes**	14.38	(4.8)	7.48	27.67	0.0
Long-standing illness w1						
	No (Ref.)	1				
	Yes**	0.56	(0.1)	0.39	0.81	0.0
Became widow between w1 and w6						
	No (Ref.)	1				
	Yes**	1.71	(0.5)	1	2.93	0.05
Education w1						
	No education (Ref.)	1				
	Medium Education	1.27	(0.3)	0.84	1.9	0.26
	High Education	1.05	(0.3)	0.57	1.93	0.87
Housing tenure w1						
	Own the house	1				
	Buying the house	1.04	(0.3)	0.61	1.78	0.88
	Rent	0.69	(0.2)	0.43	1.1	0.12
	Rent free	0.88	(0.6)	0.22	3.58	0.86
Constant		0.3	(0.1)			
Weighted base						*749*
*F test 7.6***						

** $p < 0.05$; (Ref) indicates the reference category.
Note: All independent variables are measured at wave 1, with the exception of ADL needs which is measured at Wave 6.

as the result of an accident, for example, rather than more gradually. It may be that these types of individuals are not (yet) known to the relevant health and social services and therefore it may be more difficult to receive any support needed to meet their needs. In some cases this may also be because 'younger' older people are just starting to develop care needs, which may be less severe (or may be regarded in that way by services). It is also possible that relatively younger people may be more reluctant to access services which are perceived as being designed for older people.

Our results also showed that living arrangements are a significant predictor of developing unmet needs. More specifically, those who live alone are more likely to develop unmet needs. In addition, the analysis revealed that those respondents who had experienced widowhood between waves 1 and 6 were more likely to have unmet

needs at wave 6. These results highlight the necessity for policy makers to take into account individuals' living situation and whether support from a partner is available when designing new policy measures aimed at addressing care for older individuals. It also highlights the need for local authorities to assess other forms of support available when making needs assessment (as is set out in the Care Act 2014 which came into force after these data were collected). Another implication of these findings is that those who live with others and have not been widowed may be receiving support from family members, who may themselves need support. Among those with met needs, there may be hidden unmet needs in terms of the burden of intense care on family members.

Findings also showed that having ADL difficulties in wave 6 was a positive and significant predictor of the development of unmet needs. This suggests that respondents with more severe needs (indicated by having at least one ADL rather than just IADLs or mobility needs) are more likely to have their needs unmet, something which was also found in a similar study in the US (Allen and Mor, 1997).

A key finding of the analysis is that a range of factors which we hypothesised might predict future unmet need do not, controlling for other factors. Financial status (wealth), education level, housing tenure, relationships with family, cognitive functioning, level of well-being and health related behaviours (such as smoking and physical activity) were all found not to be significant predictors of future unmet need. This means that some obvious preventive actions (while having merit in their own right) cannot be employed as catchall policies to reduce future unmet need among those who have care needs. Our research did not find evidence that improving physical activity levels, encouraging people to stop smoking and other lifestyle changes would lead to a reduction in unmet need. Nor did it find evidence that social isolation is, in and of itself, a significant predictor of developing unmet need with activities of daily living – although living alone and widowhood, which may relate to social isolation, were strong predictors. Unmet need for adult social care is also an issue affecting people at all levels of wealth; any preventative actions need to consider the needs of self-funders as well as those eligible for local authority financial support.

A second stage of this research involved interviews with older people with care needs to explore some of the secondary analysis findings in more depth and to address some of the limitations of the secondary analysis (Lambert et al., 2017). These narrative interviews, supported the finding that unmet needs are found across all social and wealth groups and allowed us to explore how needs and support develop over time and how unpaid support arrangements can be precarious, as suggested by Pickard et al. (2012). They also allowed a more nuanced understanding of the extent to which older people 'choose' to have unmet needs because they don't wish to be a burden or they place high value on their independence. While our statistical models presented here looked at how social isolation may be related to unmet need in ADLs and IADLs, the interviews highlighted that loneliness, lack of social contact and a loss of purpose are themselves important areas of unmet need, which may be more important to older people than having their physical needs met. This suggests that the broader approach to determining eligibility enshrined in the Care Act (Statutory Instruments, 2015) based on outcomes linked to well-being will help to address this, providing local authorities have the resources to meet eligible need in those eligible for financial support and to signpost self-funders to appropriate support.

6. Conclusion

This research has sought to fill a substantial gap in the literature on social care needs among older people by exploring the predictors of unmet social care needs. Drawing on data from the English Longitudinal Study of Ageing (ELSA: 2002–2012), we used logistic regression to analyse the factors and circumstances that predict developing an unmet need for social care over a 10-year period. This analysis confirmed that unmet need is an issue affecting a wide range of people, such that factors like gender, wealth, social contact, education, housing tenure, health behaviours, well-being and cognitive function do not predict the development of unmet need for care. In fact, the only predictive factors of unmet need were living alone, being relatively young (though still 50 and over), not having a longstanding illness and losing a spouse. These findings were robust to a variety of model specifications.

A limitation of this research is that we have imposed a definition of unmet need on ELSA respondents. Using an activities-based approach, we classified individuals in unmet need or needs met categories, regardless of how they would have described themselves. To some extent this is a strength as it enables us to look at gaps in service provision even among people who may not recognise their needs. However, it may mean that we have classified individuals in the unmet need category who would consider themselves to be coping and living as they wish. It may also mean we have classified some individuals as having their needs met when they would regard themselves as having unmet need in areas which we did not measure in the survey such as for social contact and involvement in hobbies and interests. The qualitative element of the project, which is reported elsewhere, explored unmet need and well-being from a user perspective, so addressing some of the limitations of the secondary analysis. It is possible that the application of a different definition of unmet need in the statistical analysis would produce different results. This is left open for future research, which should be carried out using data collected after the implementation of the Care Act in 2016, where the definition of needs could be broadened to include social contact and elements of life which provide meaning and purpose.

Despite this limitation, our analysis has yielded several important findings that reflect the complexity of the topic and the level of difficulty encountered when measuring unmet needs. These findings contribute to the current debate on the funding and organisation of social care in England and the experiences of people who need these services and will inform policy makers interested in addressing the issue of unmet social care needs among older people.

Notes

[1] Further details on the meetings are available from the authors upon request.

[2] Now called Department of Health and Social Care (DHSC).

[3] In the full report, the descriptive analysis was based on data from ELSA and from the Health Survey for England (HSE). The ELSA survey sample is drawn from respondents to the HSE. Details of the comparison between HSE and ELSA are described in the full report (Dunatchick et al., 2016).

[4] The decision to exclude stairs was based on the lack of comparability in the measure of climbing stairs between HSE and ELSA data and because difficulty with one flight of stairs was so common, it was felt that the definition included too wide a range of people, not all of whom would really have care needs.

[5] For the reasons explained earlier in the paper, however, this difficulty has been excluded.

[6] Robustness checks have been performed using variables measured at different waves (at wave 3, wave 5 and wave 6). These have shown similar patterns of results. Results are available from the authors upon request. The occurance of widowhood between wave 1 and wave 6 was included in the model because of the importance of unpaid spousal care in meeting needs. It should be noted that it is possible widowhood is not always independent of whether or not care needs are unmet, nonetheless it was included because of its importance.

[7] The variable having children has been tested in Block 1 in combination with other variables referring to the frequency of contacts with children (in person or over the phone), but has been excluded from the beginning because it was not significant.

[8] ELSA provides information about whether a long-standing illness is limiting or not. Descriptive analysis showed that the majority of respondents (about 60%) have a long-standing illness which is limiting. Tests have been performed adding this information to the variable and results showed that having a limiting longstanding illness is associated with a lower likelihood of developing unmet needs, whereas no significant association exists between having a non-limiting longstanding illness and the probability of having unmet needs.

[9] Models also included controls indicating whether a respondent experienced widowhood at each intervening waves; results showed that the point in time when individuals became widow is not relevant: results show similar patterns across waves. Results availaible from the authors upon request.

Additional File

The additional file for this article can be found as follows:

- **Annex 1.** Supporting Material. https://s3-eu-west-1.amazonaws.com/ubiquity-partner-network/up/journal/jltc/jltc-33_icardi-s1.pdf.

Acknowledgements

This paper presents independent research commissioned by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, MRC, CCF, NETSCC or the Department of Health and Social Care.

The following people made important contributions to the research at various stages: Jenny Chanfreau, Caireen Roberts, Sally McManus at NatCen, Marcus Green and Jose Ipparaguire at Age UK, Sue Arthur and Ciaran Osborne at Independent Age. We also received valuable input from those who attended our project direction and mid project meetings and the Age UK Sounding Board.

Funding Information

This project was funded by a grant from NIHR School for Social Care Research (C088/T14-035/IMMB-P66).

Competing Interests

Margaret Blake was a co-investigator on the English Longitudinal Study of Ageing between 2011 and 2015. The authors declare that they have no other competing interests.

References

Age UK. 2014. Care in Crisis.

Age UK. 2016. Health and Care or Older People in England 2015 (updated Jan 2016).

Age UK. 2017. Briefing: Health and Care of Older People in England 2017.

Allen, S and **Mor, V.** 1997. The prevalence and consequences of unmet need: Contrasts between older and younger adults with disability. *Medical Care*, 35(11): 1132–1148. DOI: https://doi.org/10.1097/00005650-199711000-00005

Banks, J, Batty, D, Nazroo, J and **Steptoe, A.** 2016. The Dynamics of Ageing Evidence from the English Longitudinal Study of Ageing 2002–15 (Wave 7). Institute for Fiscal Studies.

Banks, J, Muriel, A and **Smith, JP.** 2011. Attrition and health in ageing studies: Evidence from ELSA and HRS. *Longitudinal and life course studies*, 2(2). DOI: https://doi.org/10.14301/llcs.v2i2.115

Bottery, S, Varrow, M, Thorlby, R and **Wellings, D.** 2018. A fork in the road: Next steps for social care funding reform. The Kings Fund and Health Foundation. https://www.kingsfund.org.uk/sites/default/files/2018-05/A-fork-in-the-road-next-steps-for-social-care-funding-reform-May-2018.pdf (accessed 23/7/18).

Brimblecombe, N, Pickard, L, King, D and **Knapp, M.** 2016. Perceptions of unmet need for community social care services in England. A comparison of working carers and the people they care for. *Health and Social Care in the Community*, 25(2). DOI: https://doi.org/10.1111/hsc.12323

Brown, L and **Morris, S.** 2018. Health Survey for England 2017: Adult Social Care. NHS Digital.

Care Act Guidance. 2018. Care and Support Statutory Guidance. https://www.gov.uk/government/publications/care-act-statutory-guidance/care-and-support-statutory-guidance (accessed 1/7/19).

De Sao Jose, J, Barros, R, Samitca, S and **Teixeira, A.** 2016. Review: Older persons' experiences and perspectives of receiving social care: A systematic review of the qualitative literature. *Health and Social Care in the Community*, 24(1): 1–11. DOI: https://doi.org/10.1111/hsc.12186

Dunatchik, A, Icardi, R, Roberts, C and **Blake, M.** 2016. Predicting unmet social care needs and links to well-being: Findings from the secondary analysis. *NatCen Social Research and Ipsos MORI*: *London.* https://www.ipsos.com/ipsos-mori/en-uk/unmet-social-care-needs-and-well-being (accessed 31/7/2017).

Elger, CE, Grunwald, T, Lehnertz, K, Kutas, M, Helmstaedter, C, Brockhaus, A, et al. 1997. Human temporal lobe potentials in verbal learning and memory processes. *Neuropsychologia*, 35(5): 657–67. pmid: 9153028. DOI: https://doi.org/10.1016/S0028-3932(96)00110-8

Futeran, S and **Draper, B.** 2012. An examination of the needs of older patients with chronic mental illness in public mental health services. *Aging Mental Health*, 16: 327–34. DOI: https://doi.org/10.1080/13607863.2011.628978

Gaugler, J, Kane, R, Kane, R and **Newcomer, R.** 2005. Unmet care needs and key outcomes in dementia. *Journal of the American Geriatrics Society*, 53: 2098–105. DOI: https://doi.org/10.1111/j.1532-5415.2005.00495.x

Herr, M, Arvieu, J-J, Aegerter, P, Robine, J-M and **Ankri, J.** 2014. Unmet health care needs of older people: Prevalence and predictors in a French cross-sectional survey. *The European Journal of Public Health*, 24(5): 808–813. DOI: https://doi.org/10.1093/eurpub/ckt179

HM Government. 2012. Caring for our future: reforming care and support. Cm 8378, The Stationary Office, Norwich, 2012. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/136422/White-Paper-Caring-for-our-future-reforming-care-and-support-PDF-1580K.pdf (accessed 23/7/18).

Ismail, S, Thorlby, R and **Holder, H.** 2014. Focus On: Social care for older people – Reductions in adult social services for older people in England. Nuffield Trust and Health Foundation.

Lambert, C, Siganporia, Z, Blake, M and **Gorbatsevich, E.** 2017. Unmet need for care. *Ipsos MORI*: *London.* https://www.ipsos.com/ipsos-mori/en-uk/unmet-social-care-needs-and-well-being (accessed 31/7/2017).

Lloyd, J and **Ross, A.** 2014. The Bigger Picture: Understanding disability and care in England's older population. *The Strategic Society Centre and Independent Age*.

Local Government Association and Directors of Adult Social Services. 2015. Adult social care, health and well-being: A Shared Commitment. Spending Review Submission http://www.local.gov.uk/documents/10180/6869714/LGA+ADASS+Spendig+Review+social+care+submission/befea68e-bce0-4af3-878c-8db41210a478.

Maplethorpe, N, Darton, R and **Wittenberg, R.** 2015. Social Care: Need for and receipt of help. *Health Survey for England*, (1), 2014 Report. Health and Social Care Information Centre.

Pickard, L. 2015. A growing care gap? The supply of unpaid care for older people by their adult children in England to 2032. *Ageing and Society*, 35: 96–123. DOI: https://doi.org/10.1017/S0144686X13000512

Pickard, L, Wittenberg, R, Comas-Herrera, A, King, D and **Malley, J.** 2012. Mapping the future of family care: Receipt of informal care by older people with disabilities in England to 2032. *Social Policy and Society*, 11(4): 533–545. ISSN 1475-7464. DOI: https://doi.org/10.1017/S1474746412000346

Slamecka, N and **McElree, B.** 1983. Normal forgetting of verbal lists as a function of their degree of learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 9(3): 384. DOI: https://doi.org/10.1037//0278-7393.9.3.384

Statutory Instrument. 2015. The Care and Support (Eligibility Criteria) Regulations, 2015(313) http://www.legislation.gov.uk/uksi/2015/313/pdfs/uksi_20150313_en.pdf [accessed 21/5/2019].

Thompson, J, Wittenberg, R, Henderson, C and **Darton, R.** 2014. Social Care: Need for and receipt of help. *Health Survey for England*, (1), 2013 Report. Health and Social Care Information Centre.

Vanhoutte, B and **Nazroo, J.** 2014. Cognitive, Affective and Eudemonic Well-Being in Later Life: Measurement Equivalence over Gender and Life Stage. *Sociological Research* [Online], 19(2): 4. DOI: https://doi.org/10.5153/sro.3241

Vlachantoni, A, Shaw, H, Willis, R, Evandrou, M, Falkingham J and **Luff, R.** 2011. Measuring Unmet Need for Social Care Amongst Older People *Population Trends*, 145. DOI: https://doi.org/10.1057/pt.2011.17

Wiggins, RD, Netuveli, G, Hyde, M, Higgs, P and **Blane, DN.** 2007. The evaluation of a self-enumerated scale of quality of life (CASP-19) in the context of research on ageing: A combination of exploratory and confirmatory approaches. *Social Indicators Research*. 89(1): 71–77. DOI: https://doi.org/10.1007/s11205-007-9220-5

How to cite this article: Dunatchik, A, Icardi, R and Blake, M. 2019. Predicting Unmet Need for Social Care. *Journal of Long-Term Care*, (2019), pp. 194–205.

Submitted: 05 November 2019 **Accepted:** 05 November 2019 **Published:** 29 November 2019

Journal of Long-Term Care is a peer-reviewed open access journal published by International Long-Term Care Policy Network based at the London School of Economics and Political Science.

OPEN ACCESS